Editor Buffer Pool

This document describes purpose, use and operation of the Editor Buffer Pool which is an intermediate main storage area used by the Software AG Editor.

The following topics are covered:

- Purpose of the Editor Buffer Pool
- Obtaining Free Blocks
- Restarting the Editor Buffer Pool
- Editor Buffer Pool Parameter Macro
- Buffer Pool Initialization for Multi-User Environments

Purpose of the Editor Buffer Pool

The editor buffer pool can be seen as an extension of the editor buffer (SSIZE). It is an intermediate main storage area used by the Software AG Editor to maintain its logical files.

A logical file consists of one or more logical records and contains the data of an object (for example, a file member) maintained by the editor. As a user can work with more than one object at the same time, several logical files can exist concurrently for each user.

The number of logical files (as well as the percentage of recovery records in the Editor Work File is defined in the buffer pool parameter macro.

The editor buffer pool can be defined as a local or a global (OS/390 and BS2000/OSD only) buffer pool. In multi-user environments (Com-plete, CICS, IMS/TM, UTM), the editor buffer pool is shared by all editor users of either the same region (local pool) or more than one region (global pool). Under CMS, the buffer pool is always a local one.

The editor buffer pool contains various control tables and a number of data blocks:

Area	**Size**
Main control block	500 bytes
Logical file table	20 bytes per logical file
Work file table	4 bytes per record
Recovery file table	16 bytes per record
Buffer pool block table	28 bytes per block
Buffer pool blocks	see text below

As the size of a buffer pool block is equal to the size of a work file record, one buffer pool block can contain one logical file record. The minimum number of buffer pool blocks is 32.

The buffer pool is initialized by the first editor user. During initialization, all recovery records are checked to build the recovery file table.

Several functions are provided to access the buffer pool (for example, functions to allocate, read, write or delete a record).

Obtaining Free Blocks

If the buffer pool becomes full, buffer pool blocks have to be moved to an external dataset, the editor work file, to obtain free blocks.

In such a situation, the editor checks all logical files for their timeout value and deletes any logical file which has not been accessed within the specified time. This means that all its buffer pool blocks and work file records are freed, and the logical file is lost.

If there is still no buffer pool block available, the editor moves the oldest block to the work file, according to the specified timeout parameter values (see the **Generation Parameters** function of the SYSEDT Utility (see the section Debugging and Monitoring).

Restarting the Editor Buffer Pool

The SYSEDT Utility (see the section Debugging and Monitoring) can be used to terminate the editor buffer pool. This avoids the restart of the TP system or of the global buffer pool.

If SYSEDT is not available due to buffer-pool problems, the program BPTERM can be used to terminate the buffer pool.

Important: All Natural sessions must be restored if you want them to use the editor after buffer-pool restart.

Editor Buffer Pool Parameter Macro

The editor buffer pool parameter macro (NTEDBP) is required to define parameters for the operation of the editor buffer pool.

When the editor work file is formatted, these parameters are stored into the work file control record while all other records are cleared. Thus, reformatting a work file that has been previously used, means that all editor checkpoint and recovery information is lost.

Some of these parameters can be modified dynamically during execution of the buffer pool by using the Editor Buffer Pool Services utility SYSEDT (see the section Debugging and Monitoring).

Specifying NTEDBP

Specify the NTEDBP macro as follows:

```
NTEDBP keyword=value, ...
```

Keyword Parameters of NTEDBP Macro

The following keyword parameters are available:

Keyword	Range	Default	Description
DDNAME	A8	CMEDIT	Work file name for JCL definition. The dataset definition name can be changed only if the parameter module is linked to the module NATEDT.
DSNAME	A44	none	Work file dataset name (OS/390 only), for batch and TSO. If no DD card is supplied or no ALLOC statement is issued (TSO), DSNAME will be allocated automatically.
FMODE	A2	A1	Work file mode under VM/CMS only. The file type is always DATA.
LRECL	800-16384	4096	Work file record length (BS2000/OSD and CMS only). Under BS2000/OSD, the record length must be a multiple of 2048 bytes.
RECNUM	100 - 65535	200	Number of work file records under VMS/CMS only. This number determines the size of the work file during the first initialization.
PWORK	0-100	50	Percentage of work file records used as work records. The remaining records are used as recovery records.
RWORK	51-100	90	Percentage of work records used for regular logical files. The remaining records are used internally to release blocks from the buffer pool.
MAXLF	100-999999	1000	Maximum number of logical files.
FTOUT	60-16777215	86400	Timeout value (in seconds) for logical files. A logical file is deleted after the specified time interval has been exceeded and no access has occurred.
DTOUT	1-32767	300	Logical file timeout check value (in seconds). Logical files are checked for timeout each time the specified time interval has been exceeded.
CTOUT	1-32767	120	Timeout value (in seconds) for changed buffer pool blocks. A changed buffer pool block is written to the work file after the specified time interval has been exceeded, and no unchanged or free block is available.
UTOUT	1-32767	20	Timeout value (in seconds) for unchanged buffer pool blocks. An unchanged buffer pool block is written to the work file after the specified time interval has been exceeded and no free block is available.
LTOUT	1-32767	20	Timeout value (in seconds) for locked buffer pool blocks. A buffer pool block which was locked during a read from the work file is freed after the specified time interval has been exceeded.
IMSG	ON or OFF	ON	Determines whether a buffer pool initialization and termination message is issued on the operator console.
ITOUT	1-32767	300	Buffer pool initialization timeout value (in seconds) for multi-user buffer pools only. The buffer pool is initialized by the first user by whom it is accessed. Other users have to wait until the first user finishes initialization. If the initialization is not finished after the specified time interval (for example, due to an abnormal termination of the first user); all other users receive an error message.

For more information on buffer pool performance, refer to the SYSEDT Utility (see the section Debugging and Monitoring).

Buffer Pool Initialization for Multi-User Environments

During the buffer pool initialization, all recovery records are read from the editor work file. Therefore, the first users have to wait for a long time or even receive a timeout message until the editor buffer pool initialization is finished.

For this reason, a special Natural program has been supplied to trigger the buffer pool initialization before the first user becomes active. This program can be activated either during the startup of the TP monitor, or by a batch job if a global buffer pool is used.

The session must then be started with the session parameter:

```
STACK=(LOGON SYSEDT,user,password;BPINIT;FIN)
```

The following platform-specif requirements apply:

Platform:	Comment:
CICS	If the session runs asynchronously, SENDER=CONSOLE must be specified to obtain any error messages issued during initialization. The source program FRONTPLT is supplied as a sample program to show you how to start an asynchronous Natural session during CICS startup via PLTPI.

